
Setting up Minikube

Getting set up

Before we dive into Kubernetes, you need to provision a local Minikube cluster for your containerized app. Then you won't have to wait for it to be ready for the subsequent labs.

Install a Hypervisor

If you do not already have a hypervisor installed, install one for your OS now:

Operating system Supported hypervisors:

> macOS VirtualBox, VMware Fusion, HyperKit
>
> Linux VirtualBox, KVM
>
> Windows VirtualBox, Hyper-V
>
> Note: Minikube also supports a --vm-driver=none option that runs the Kubernetes components on the host and not in a VM. Using this driver requires Docker and a Linux environment but not a hypervisor.

Install Minikube on your OS

macOS

Requires installing a hypervisor, such as hyperkit (recommended) or VirtualBox.

The easiest way to install Minikube on macOS is using Homebrew:

```
# Install brew
$ /usr/bin/ruby -e "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/ins

#Install minikube
$ brew cask install minikube
```

Or if you don't want to use **brew**

```
$ curl -Lo minikube https://storage.googleapis.com/minikube/releases/latest/min
  && chmod +x minikube

$ sudo mv minikube /usr/local/bin
```

Linux

Requires either the kvm2 driver (recommended), or VirtualBox

VT-x/AMD-v virtualization must be enabled in BIOS

manually: `curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64 && sudo install minikube-linux-amd64 /usr/local/bin/minikube`

Windows 10

Requires a hypervisor, such as VirtualBox (recommended) or HyperV

VT-x/AMD-v virtualization must be enabled in BIOS

using chocolatey `choco install minikube`

manually: Download and run the installer

Starting minikube (all macOS, Windows and Linux)

Then we start minikube (parameters are important for the Istio Lab):

```
$ minikube start --vm-driver virtualbox --memory=8192 --cpus=4

😄  minikube v1.0.1 on darwin (amd64)
💿  Downloading Minikube ISO ...
 113.03 MB / 142.88 MB [==================================>--------]  79.11% 1m6

 ...

😄  minikube v1.0.1 on darwin (amd64)
🤹  Downloading Kubernetes v1.14.1 images in the background ...
💡  Tip: Use 'minikube start -p <name>' to create a new cluster, or 'minikube d
🔄  Restarting existing virtualbox VM for "minikube" ...
⌛  Waiting for SSH access ...
📶  "minikube" IP address is 192.168.99.100
🐳  Configuring Docker as the container runtime ...
🐳  Version of container runtime is 18.06.3-ce
⌛  Waiting for image downloads to complete ...
✨  Preparing Kubernetes environment ...
🚜  Pulling images required by Kubernetes v1.14.1 ...
🔄  Relaunching Kubernetes v1.14.1 using kubeadm ...
⌛  Waiting for pods: apiserver proxy etcd scheduler controller dns
📯  Updating kube-proxy configuration ...
🤔  Verifying component health .....
💗  kubectl is now configured to use "minikube"
🏄  Done! Thank you for using minikube!
```

Wait for minikube to start this may take some time to download and start the cluster.

If you need some more details: Install MiniKube

Tips and Tricks

Hint

Ir you want to use hyperkit you have to install it with

```
$ brew install hyperkit
$ brew install docker-machine-driver-hyperkit
$ sudo chown root:wheel /usr/local/bin/docker-machine-driver-hyperkit && sudo ch
```

And start minikube with

```
$ minikube start --vm-driver hyperkit --memory=8192 --cpus=4
```

Hint:

IF you get the following error: 💣 Error starting cluster: wait: waiting for component=kube-apiserver: timed out waiting for the condition

Try deactivating your VPN (Cisco AnyConnect, ...) and/or reboot.

Hint:

If needed you can specify the VM provider:

```
minikube start --memory=8192 --cpus=4 --vm-driver=virtualbox
```

```
minikube start --memory=8192 --cpus=4 --vm-driver=vmwarefusion
```

Hint:

If you have previously installed minikube, and run:

`minikube start`

And the command returns an error:

`machine does not exist`

You need to wipe the configuration files:

`rm -rf ~/.minikube`

Download the Kubernetes CLI

To view a local version of the Kubernetes dashboard and to deploy apps into your clusters, you will need to install the Kubernetes CLI that corresponds with your operating system:

For Windows users:

Manual install

> Download for Windows
>
> And add the binary in to your PATH.

or using chocolatey `choco install kubernetes-cli`

For OS X and Linux users:

Install via command line (preferred)

```
$ curl -LO https://storage.googleapis.com/kubernetes-release/release/v1.14.0/bi
$ mv ./kubectl /usr/local/bin/kubectl
$ chmod +x /usr/local/bin/kubectl
```

Direct download

Download from:

OS X

Linux

1. Move the executable file to the `/usr/local/bin` directory using the command `mv /<path_to_file>/kubectl /usr/local/bin/kubectl` .
2. Make sure that `/usr/local/bin` is listed in your PATH system variable.

```
$ echo $PATH
/usr/local/bin:/usr/bin:/bin:/usr/sbin:/sbin
```

3. Convert the binary file to an executable: `chmod +x /usr/local/bin/kubectl`

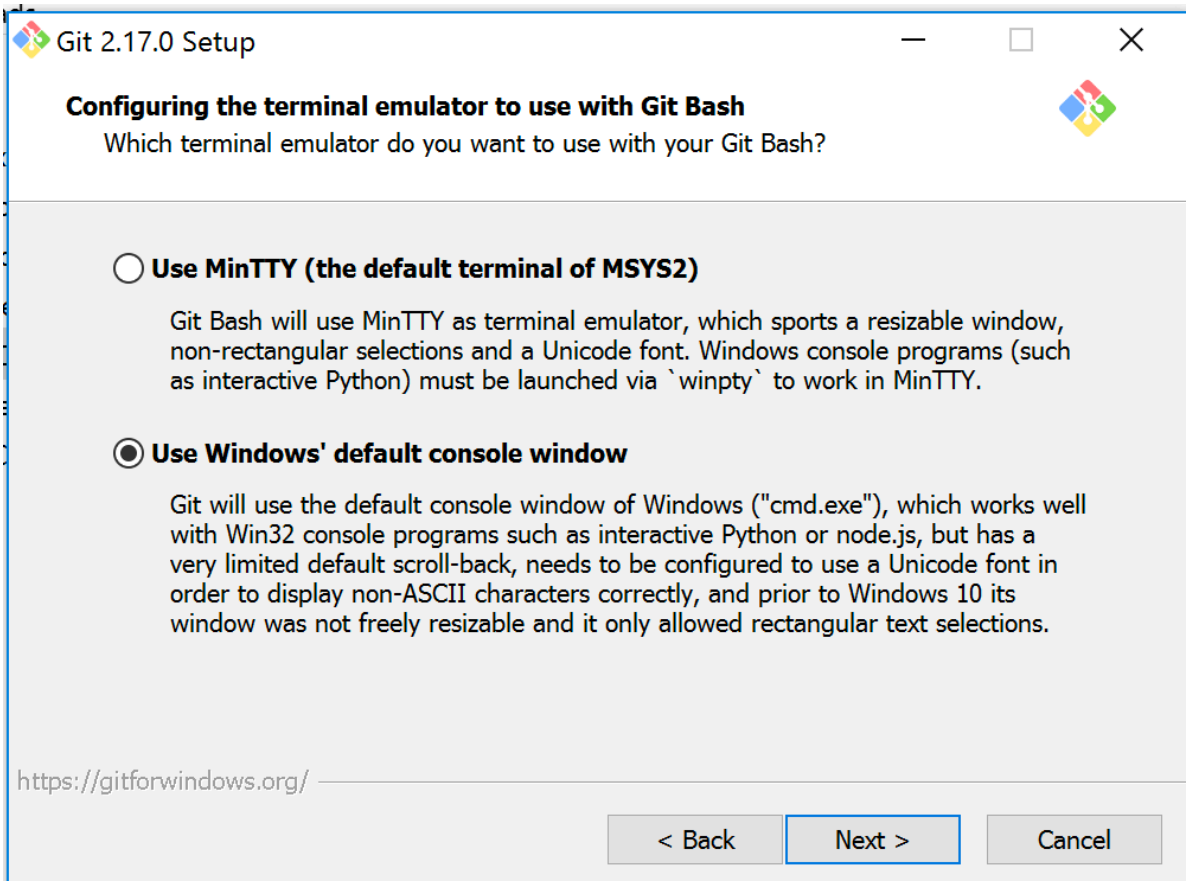
Install Git on your laptop

To do so :

For MacOS : http://mac.github.com

For Windows: http://git-scm.com/download/win

At some point during the installation, change to the **"Use Windows default console"** and continue the installation.



Hint SetUpGIT

No hint available

1. Check kubectl

type the following command :

`kubectl version --short`

And you should get version for your client :

```
$ kubectl version --short
Client Version: v1.xx.yy
error: You must be logged in to the server (the server has asked for the client
```

The error at the end is **normal** because we need to specify how to connect to the master (we will see this in the labs section).

1. Check git

type the following command :

```
git version
```

And you should get something similar :

```
$ git version
git version 2.18.0
```